

SEQUENCE LISTING

SEQ ID NO: 1

MVLLYSQASWDKRSKADALVLPFWMKNSKAQEAAVVDEDDYKLVYQNALSNFSGKKKG
 ETAFLFGNDHTKEQKIVLLGLGKSEEVSGTTVLEAYAQAATTVLRKAKCKTVNILLPTISQ
 LRFSVEEFLTNLAAGVLSLNNYPTYHKVDTSLPFLEKVTVMGIVSKVGDKIFRKEESLF
 EGVYLTRDLVNTNADEVTPKLA AVAKDLAGEFASLDVKILDRKAILKEKMGLLA AVA
 KGAAVEPRFIVLDYQGKPKSKDRTVLIGKGVTFDSGGLDLKPGKAMITMKEDMAGAAT
 VLGIFSALASLELPINVTGIIPATENAIGSAAYKMGDVYVGMTGLSVEIGSTDAEGRLLA
 DAISYALKYCNPTRIIDFATLTGAMVVS LGESVAGFFANNDVLARDLABASSETGEALW
 RMPLVEKYDQALHSDIADMKNIGSNRAGSITAALFLQRFLDNPVAVAHLDIAGTAYHE
 KEELPYPKYATGFGVRCLHYMEKFLSK

SEQ ID NO: 2

MTASGGAGGLGSTQTVDVARAQAAAATQDAQE VIGSQEASEASMLKGCEDLINPAAAT
 RIKKKGEKFESLEARRKPTADKA EKKSESTE EKGDTPLEDRFTEDLSEVSGEDFRGLKNS
 FDDSSPDEILDALTSKFSDPTIKDLALDYLIQTAPSDGKLKSTLIQAKHQLMSQNPQAIV
~~GGRNVL LASETEASRANTSPSSLSLYEQVTSSPNCANLHQMLASYLESEKTA VMEEFLV~~
 NGMVADLKSEGSPIPAKLQVYMTLSNLQALHSVNSFFDRNIGNLENSLKHEGHAPIPS
 LTTGNLTKTFLQLVEDKFPSSSKAQKALNELVGPDTGPQTEVLNLFRRALNGCSPRIFSGA
 EKKQQLASVITNTLDAINADNEDYPKPGDFPRSSFSSTPPHAPVPQSEIPTSPTSTQPPSP

SEQ ID NO: 3

MCIKRKKTWIAFLAVVCSFCLTGCLKEGGDSNSEKFIVGTNATYPPFEFVDKRGEVVGFD
 IDLAREISNKLKGTLDVREFSFDALILNLKQHRIDAVITGMSITPSRLKEILMIPY YGEEIKH
 LVLVFKGENKHPLPLTQYRSVAVQTGT YQEAYLQSLSEVHIRSFDSTLEVLM EVMHGKS
 PVAVLEPSIAQVVLKDFPALSTATIDL PEDQWVLGYGIGVASDRPALALKIEAAVQEIRKE
 GVLA BLEQKWGLNN

SEQ ID NO: 4

MSEKRKSNKIIGIDLGTNSCVSVM EGGQPKVIASSEGTRTTPSIVAFKGGETLVGIPAKR
 QAVTNPEKTLASTKRFIGRK FSEVESEIKTVPYKVAPNSKGD AVFDVEQKLYTP EEIGAQI
 LMKMKETA EAYLGETVTEAVITVPAYFNDSQRASTKDAGRIAGLDVKRIIPEPTAAALA
 YGIDKEGDKKIAVFDLGGGTFDISILEIGDGVFEVLSTNGDTHLGGDDFDGVIINWMLDEF
 KKQEGIDLSKDNMALQRLKDAAEKAKIELSGVSSTEINQPFITIDANGPKHLALT LTRAQF
 EHLASSLIERTKQPCAQALKDAKLSASDIDDVLLVGGMSRMPAVQAVVKEIFGKEPNKG
 VNPDEVVAIGAAIQGGV LGGEVKDVLLDVIPLSLGIETLGGVMTPLVERNTTIPTQKKQI
 FSTAADNQPAVTIVVLQGERPMAKDNKEIGRFDLTDIPPAPRGHPQIEVTFDIDANGILHV
 SAKDAASGREQKIRIEASSGLKEDEIQMIRDAELHKEEDKQRKEASDVKN EADGMIFRA
 EKAVKDYHDKIPAE LVKEIEEHIEKVRQA IKEDASTTAIKAASDELSTHMQKIG EAMQAAQ
 SASAAASSAANAQGGPNINSEDLKKHSFSTRPPAGGSASSTDNIEDADVEIVDKPE

SEQ ID NO: 5

MHDALQSILAIQELDIKMIRLMRVKKEHQNELAKIQALKTDIRRKVEEKEQEMEKLKDQI
 KGGEKRIQEISDQINKLENQQA AVKKMDEFNALTQEMTAANKERRTLEHQLSDLMDKQ
 AGSEDLLISLKESLSTENSSSAIEBEEIRENIRKINEEGRSLLSQTQLKETTDPELFSIYERL
 LNNKKDRVVVPIENRVCSGCHIALTPQHENLVRKQDHLVFCEHCSRLY WQELQSPSAE
 GATTKR RRRRTAV

SEQ ID NO: 6

MKKFLLLSLMSLSSLPTFAANSTGTIGIVNLRRCLEESALGKKESAEFEKMKNQFSNSMG
KMEEELSSYISKLQDDDYMEGLSETAAAE LRKKFEDLSAEYN TAQGGYYQILNQSNLKR
MQKIMBEVKKASETVRIQEGLSVLLNEDIVLSIDSSADKTD AVIKVLDDSFQNN

SEQ ID NO: 7

MTTESLETLVEQLSGLTVLELSQLKKLLEEKWDVTAAPVVAVAGAAAAGDAPASAEP
TEFAVILEDVPSDKKIGVLKVVREVTGLALKEAKEMTEGLPKTVKEKTSKSDAEDTVKK
LQEAGAKAVAKGL

SEQ ID NO: 8

MKKTALLAALCSVVSLSCCRIVDCCFEDPCAPIQCSPCESKKKDV DGGCNSCNGYVPA
CKPCGGDTHQDAKHGPQARGIPVDGKCRQ

SEQ ID NO: 9

MPKIDTCDCSVSNTPELLAIRTRVTQSYNEAQ TILSSIPDGIFLLSESGEILICNPQARAILGIP
EDIQLVTRMFHDFPD TFFGFSVQEALEKEVP PKTIRLTLSQELSQKEVEVFVRKNISHDFL
FLLIRDRSDYRQLEQAIEKYRSISELGKIAATLAHEIRNPLTSISGFATLLKEELSSERHORM
LNVIEGTRSLNSLVSSMLEYTKIQLNLRSIDLODESSLIPELSLTPESCTFRRTILSPIQRSI
DPDRLRCVIWNLVKNAVEASDEEIFLELHEKGFSVINTGTLPPNIQEKLFIPFFTTKPPQNG
LGLAEAHKIMRLHGGDLVSTQDNRTTFTILWTPA

SEQ ID NO: 10

MKVILRALCLFLVLP CGCYARVPSFEPFRGAIAPNRYTPKHSPELYFEMGDKYFQAKKFK
QALLCFGMTHHFPEHALHPKAQFLVGLCYLEMGHDPDLADKALTQYQELADTEYSEQLF
AIKYSIAQSFANGKRKNIVPLEGFPKLLKADTDALRIFEEIVTASSDADLKASALYAKGAL
LFDKEYSEAIKTLKKVSLQFP SHSLSPESFTLIAKIHCLQALQEPYNEQYLQDARMNAAA
LRKQHPNHPNTEVENYIHHMCEAYASCLYSTGRFYEKKRKASSAKIYY SIALENFPDTS
YVAKCNKRRLERLSKQMS

SEQ ID NO: 11

MFDVVISDIEAREILDSRGYPTLCVKVITNTGTTFGEACVPSGASTGIKEALELRDKDPKRY
QGKGVLQAISNVEKVLMPALQGFSVFDQITADAIMIDADGTPNKEKLGANAILGVSLAL
AKAAANTLQRPLYRYLGGFSFHVLP CPMMN LINGGMHATNGLQFQEFMIRPISAPSLTE
AVRMGAEVFNALKKILQNRQLATGVGDEGGFAPNLASNAEALD LLLTAIETAGFTPRED
ISLALDCAASSFYNTQDKTYDGKSYADQVGILAE LCEHYPIDSIEDGLAEEDFEGWKLLS
ETLGD RVQLVGDDL FVTNSALIAEGIAQGLANAVLIKPNQIGTLTETAEAIRLATIQGYAT
ILSHRSGETEDTTIADLAVAFNTGQIKTGSLSRSERIAKYNRLMAIEEBMGPEALFQDSNPF
SKA

SEQ ID NO: 12

MMKRLLCVLLSTSVFSSPMLGYSASKKDSKADICLAVSSGDQEV SQEDLLKEVSRGFSR
VAAKATPGVVYIENFPKTGNQAIASPGNKRGFQENPF DYFNDEFFNRFFGLPSHREQRP
QQRDAVRGTGFIVSEDGYVVTNHVVEDAGKIHVTLHDGQKYTAKIVGLDPKTDLAVI
KIQAEKLPFLTFGNSDQLQIGDWAIAIGNPFGLQATVTVGVISAKGRNQLHIVDFEDFIQT
DAAINPGNSGGPLLNINGQVIGVNTAIVSGSGGYIGIFAIPSLMAKRVIDQLISDGQVTRG
FLGVTLQPIDSELATCYKLEKVVY GALVTDVVKGSPA EKAGLRQEDVIVA YNGKEVESLS
ALRNAISLMMPGTRVVLKIVREGKTIEIPVTVTQIPTEDGV SALQKMGVRVQNTPEICKK
LGLAADTRGILVVAVEAGSPAASAGVAPGQLILAVNRQRVASVEELNQVLKNSKGENVL
LMVSQGDVVRFIVLKSDE

SEQ ID NO: 13

MKKINKIVLAVGGTGGHIIPALAAARETFIHEDIEVLLLGKGLAHFLGDDSEVAYCDIPSGS
 PFSLRVNRMFSGAKQLYKGYVAALQKIRDFTPDLAIGFGSYHSLPAMLASIRSRIPLFLHE
 QNIVPGKVNKLFSRFAKGVGMSFAAAGEHFHCRAEVFLPIRKLSEQIVFPGASPVICVV
 GGSQGAAILNDVVPKALARIRESYSLYVHHIVGPKGDLQAVSQVYQDAGINHTVTAFD
 HNMLGVLQASDLVISRSGATMLNELLWVQVPAILIPYPGAYGHQEVNAKFFTHTVGGGT
 MILQKYLTEESLSKQVLLALDPATSENRRKAMLSAQKKSFKSLYQFICESL

SEQ ID NO: 14

MGNSGFYLYNTQNCVFADNIKVGQMTEPLKDQQIILGTTSTPVA AKMTASDGISLTVSN
 NPSTNASITIGLDAEKAYQLILEKLGDQILGGIADTIVDSTVQDILDKITDPSLGLLKAFN
 NFPITNKIQCNGLFTPRNIETLLGGTEIGKFTVTPKSSGSMFLVSADIIASRMEGGVVLALV
 REGDSKPYAISYGYSSGVPNLC SLRTRIINTGLTPTTYSLRVGGLESGVVVWNALSNGNDI
 LGITNTSNVSFLEVIPQTNA

SEQ ID NO: 15 (pmpA)(CT412)

MNRVIEIHAHYDQRQLSQSPNTNFLVHHPYLTLPKFLLGALIVYAPYSFAEMELAISGHK
 QGKDRDFTFMISSCPEGNTYIINRKLILSDFSLLNKVSSGGAFRNLAGKISFLGKNSSASIH
~~FKHININGEGAGVFESESSIEFTDLRKLVAEGSESTGGIFTAKEDISEKNNHHIAERNNTKGN~~
 GGVIQLQGDMKGSVSFVDQRGAIFTNNQAVTSSSMKHSRGGGAGISGDFAGSRILFLNNQ
 QITFEGNSAVHGGAIYNKNGLVEFLGNAGPLAFKENTTIANGGAIYTSNFKANQQTSPILF
 SQNHANKKGGAIYAQYVNLEQNQDTIRFEKNTAKEGGGAITSSQCSITAHNTIIFSDNAA
 GDLGGGAILLEGKKPSLTIAHSGNIAFSGNTMLHITKKASLDRHNSILIKEAPYKIQLA
 NKNHSIHFFDPVMALSASSSPIQINAPEYETPFFSPKGMIVFSGANLLDDAREDVANRTSIF
 NQPVHLYNGTLSIENG AHLIVQSFKQTGGRI SLSPGSSLALYTMNSFFHGNISSKEPLEING
 LSFQVDISPSNLQAEIRAGNAPRLRLSGSPSIHDPEGLFYENRDTAASPYQMEILLTSDKIVDI
 SKFTTDSLVTNKQSGFQGAWHFSWQPNNTINNTKQKILRASWLPTGEYVLESNRVGRAVP
 NSLWSTFLLQTASHNLGDHLCNNRSLPTSYFGVLIGGTGAEMSTHSSEESFISRLGAT
 GTSIIRLTPLSLTSGGGSHMFGDSFVADLPEHITSEGIVQNVGLTHVWGPLTVNSTLCAAL
 DHNAMVRICSKKDHTY GKWDTFGMRGTLGASYTFLEYDQTMRVFSFANIEATNILQRA
 FTETGYNPRSFSKTKLLNIAPIGIGYEFCLGNSSFALLGKGSIGYSRDIKREN PSTLAHLAM
 NDFAWTTNGCSVPTSAHTLANQLILRYKACSLYTAYTINREGKNLSNSLSCGGYVGF

SEQ ID NO: 16 (pmpB)(CT413)

MKWLSATAVFAAVLPSVSGFCFPEPKELNFSRVGTSSSTTFTETVGEAGAEYIVSGNASF
 TKFTNIPTDTTTTPTNSNSSSSNGETASVSESDSTTTTPDPKGGGAFYNHSGVLSFMTR
 SGTEGSLTLSEIKITGEGGAIFSQGELLFTDLTGLTIQNNLSQLSGGAIFGESTISLSGITKAT
 FSSNSAEVPAPVKKPTEPKAQTASETSGSSSSSGNDSVSSPSSRAEPAAANLQSHFICATA
 TPAAQTD TETSTPSHKPGSGGAIYAKGDLTIADSQEVLF SINKATKDGGAIFAEKDV SFEN
 ITSLKVQTN GAEEKGGAIYAKGDL SIQSSKQSLFNSNYSKQGGGALYVEGDINFQDLEEIR
 IKYNKAGTFETKKITL PKAQASAGNADAWASSPQSGSGATTVSNSGDS SSGSDSTSET
 VPATAKGGGLYTDKNLSITNITGII EIANNKATDVGGGAYVKGT LTCENSHRLQFLKNSS
 DKQGGGIYGEDNITLSNLTGKTLFQENTAKEEGGGLFIKGTDKALMTGLDSFCLNNTS
 EKHGGGAFVTKEISQTYTSDVETIPGITPVHGETVITGNKSTGGNGGGVCTKRLALS NLQ
 SISISGNSAAENGGAHTCPDSFPTADTAEQPAASAAATSTPESAPVVSTALSTPSSSTVSS
 LTLAASSQASPATSNKETQDPNADTDLLIDYVVDTTISKNTAKKGGGIYAKKAKMSRID
 QLNISENSATEIGGGICCKESLELDALVSLSVTENLVGKEGGGLHAKTVNISNLKSGFSFS
 NNKANSSSTGVATTASAPAAAAAASLQAAAAAVPSSPATPTYSGVVGGAIYGEKVTF SQC
 SGTCQFSGNQAIDNNPSQSSLNVQGGAIYAKTSLSIGSSDAGTSYIFSGNSVSTGKSQTTG
 QIAGGAIYSPTVTLNCPATFSNNTASMATPKTSSSEDGSSGNSIKDTIGGAIAGTATILSGVS
 RPSGNTADLGAAGTLANANTPSATSGSQNSITEKITLENGSFIFERNQANKRGAIYSPSVS
 IKGNNTITFNQNTSTHDGSAIYFTKDATIESLGSVLFTGNNVTATQASSATSGQNTNTANY

GAAIFGDPGTTQSSQTDAILTLLASSGNITFSNNSLQNNQGDTPASKFCSIAGYVKLSLQA
 AKGKTISFFDCVHTSTKKIGSTQNVYETLDINKEENSNPYTGTIVFSSELHENKSYIPQNAI
 LHNGTLVLKEKTELHVVSFEQKEGSKLIMKPGAVLSNQNIANGALVINGLTIDLSSMGTP
 QAGEIFSPPELRIVATTSSASGGSGVSSSIPTNPKRISAAAPSGSAATTPTMSENKVFLTGD
 TLIDPNGNFYQNPMLGSDLDVPLIKLPTNTSDVQVYDLTSLGDLFPQKGYMGTWTLDSN
 PQTGKLQARWTFDITYRRWVYIPRDNHFYANSILGSQNSMIVVKQGLINNMLNARFDDI
 AYNFWVSGVGTFLAQQTPLSEEFSSYSSRGTSVAIDAKPRQDFILGAAPSKMVGKTKA
 IKKMHNYFHKGSEYSYQASVYGGKFLYFLLNKQHGVALPFLIQGVVSYGHIKHDTTILY
 PSIHENKGDWEDLGWLADLRISMDLKEPSKDSSKRITVYGELEYSSIRQKQFTEIDYDPR
 HFDDCAYRNLSPVGCVEGAIMNCNILMYNKLALAYMPSIYRNNPVCKYRVLSSNEA
 GQVICGVPTRTSARAESTQLYLGPFWTLYGNYTIDVGMYTLSQMTSCGARMIF

SEQ ID NO: 17 (pmpC)(CT414)

MKFMSATAVFAAALSSVTEASSIQDQIKNTDCNVSKLGYSTSQAFTDMMLADNTEYRA
 ADSVSFYDFSTSSRLPRKHLSSSSEASPTTEGVSSSSGETDEKTEEBELDNGGHIYAREKLT
 SESQDSLSNQSIELHDNSIFFGEGEVIFDHRVALKNGGAIYGEKEVVFENIKSLLVEVNIAV
 EKGGSVYAKERVSLENVTEATFSSNGGEQGGGGIYSEQDMLISDCNNVHFQNAAGAT
 AYKQCLDEEMIVLLAECVDSLSEDTLSTPETEQTESNGNODGSSEETEDTQVSESESTPS
 PDDVLGKGGGIYTEKSLTITGITGIDFVSNIATDSGAGVFTKENLSCTNTNSLQFLKNSA
 GQHGGGAYVTQTMSVTNTTSESITTPPLIGEVIFFSENTAKGHGGGICTNKLSSLNKTVT
 TKNSAKESGGAIFTDLASIPITDTPESSTPSSSPASTPEVVASAKINRFFASTAKPAAPSLTE
 AESDQTDQTETSDTNSDIDVSIENILNVAINQNTSAKKGGAIYGKKAKLSRINNELSGNS
 SQDVGGGLCLTESVEFDAIGSLLSHYNSAAKEGGAIHSKTVTLNLKSTFTFADNTVKAI
 VESTPEAPEEIPPVEGEESTATEDPNSNTEGSSANTNLEGSQGDADTGTGDVNNESQDTS
 DTGNAESEEQLQDSTQSNEENTLPNSNIDQSNENTDESSDSHTEITDES VSSSES GSSTP
 QDGGGAASSGAPSGDQISANACLAKSYAASTDSSPVSNSSGSEEPVTSSSDSDVTASSDNP
 DSSSGDSAGDSEEPTEPEAGSTTETLTLIGGGAIYGETVKIENFSGQGIFSGNKAIDNTE
 GSSSKSDVLGGAVYAKTLFNLDGSSRRVTFTSGNTVSSQSTTGQVAGGAIYSPTVTIATP
 VVFSKNSATNNANNTTDTQRKDTFGGAIGATSAVSLSGGAHFLENVADLGAIGLVP
 QNTETVKLESGSYFEKNKALKRATYAPVVSIAKYATATFNQNRSLSEGSAYFTKEASIE
 SLGSVLFTGNLVTLLSTTTEGTPATTSGDVTKYGAAIFGQIASSNGSQTDNLPLKLIASG
 GNICFRNNEYRPTSSDTGTSTFCSIAGDVKLTMQAAKGKTISFFDAIRTSTKKTGTQATAY
 DTLDINKSEDSETVNSAFTGTILFSELHENKSYIPQNVVLHSGSLVLKPNTELHVISFEQK
 EGSSLVMTPGSVLSNQTVADGALVINNMTIDLSSVEKNGLAEGNIFTPELRIDTTTGGSG
 GTPSTDSESNQNSDDTEEQNNNDASNQGESANGSSSPAVAAAHTSRTRNFAAAATATPT
 TTPTATTTTNSQVILGGEIKLIDPNGTFFQNPALRSDQQISLLVLPTDSSKMQAQKIVLTGD
 IAPQKGYTGTLTDPDQLQNGTISVLWKFDSYRQWAYVPRDNHFYANSILGSQMLMVT
 VKQGLLNDKMNLARFEEVSNNLWISGLGTMLSQVGTPTSEEFYYSRGASVALDAKP
 AHDVIVGAAPSKMIGKTKSLKRENNYTHKGSEYSYQASVYGGKPFHFVINKKTEKSLPL
 LLQGVISYGYIKHDTVTHYPTIRERNKGWEDLGWLTALRVSSVLRTPAQGDTKRITVY
 GELEYSSIRQKQFTEYDPRYFDNCTYRNLAIMGLAFEGELSGNDILMYNRFSVAYML
 SIYRNSPTCKYQVLSSGEGGEIICGVPTRNSARGEYSTQLYLGPLWTLYGSYTIADAHTL
 AHMMNCGARMTF

SEQ ID NO: 18 (pmpD)(CT812)

MSSEKDIKSTCSKFSLSVVAAILASVGLASCVDLHAGGQSVNELVYVGPQAVLLLDQIR
 DLFVGSKDSQAEQGQYRLIVGDPSSFQEKDADTLPGKVEQSTLFSVTNPVVFQGVDDQDQ
 VSSQGLICSFTSSNLDSPRDGESFLGIAFVGDSKAGITLTDVKASLSGAALYSTEDLIFEKI
 KGGLEFASCSLEQGGACAAQSILIHDCQGLQVKHCTTAVNAEGSSANDHLGFGGGAFF
 VTGSLSGEKSLYMPAGDMVVANCDGAISFEGNSANFANGGAIAASGKVLVANDKKTS
 FIENRALSGGAIAASSDIAFQNCALVFKGNCAIGTEDKGSLLGGGAISSLGTVLLQGNHGI

TCDKNESASQGGAI FGKNCQISDNEGPVVRDSTACLGGAIAAQEIVSIQNNQAGISFEG
 GKASFGGGIACGSFSSAGGASVLGTIDISKNLGAISFSRTLCTTSDLGQMEYQGGGALFGE
 NISLSENAGVLTFKDNIVKTFASNGKILGGGAILATGKVEITNNSEGISFTGNARAPQALPT
 QEEFPLFSKKEGRPLSSGYSGGGAILGREVAILHNAAVVFEQNRLQCSEEEATLLGCCGG
 GAVHGMDSIVGNSSVRFGNNYAMGQGVSGGALLSKTVQLAGNGSVDFSRNIASLGG
 GALQASEGNCELVDNGYVLFDRDNRGRVYGGAI SCLRGDVVISGNKGRVEFKDNIATRLY
 VEETVEKVEEVEPAPEQKDNNELSFLGRAEQSFITAANQALFASEDGDLSPESSISSEELA
 KRRECAGGAIFA KRVRIVDNQEA VVFSNNFSDIYGGAIFTGSLREEDKLDGQIPEVLISGN
 AGDVVFSGNSSKRDEHLPHGTGGGAICTQNL TISQNTGNVLFYNNVACSGGAVRIEDHGN
 VLLEAFGGDIVFKGNSSFRAQGS DAIFYAGKESHITALNATEGHAIVFHDALVFENLEER
 KSAEVL LINSRENPGYTGSIRFLEAESKVPQCIHVQQGSLELLNGATLCSYGFQKQDAGAK
 LVLAAGAKLKILDSGTPVQQGHAI SKPEAEIESSEPEGASLWIAKNAQTTPMVDIHTI
 SVDLASFSSSQEGTVEAPQVIVPGGSYVRS GELNLELVNTTGTGYENHALLKNEAKVPL
 MSFVASGDEASAEISNLSVSDLQIHVVTPEIEEDTYGHMGDWSEAKIQDGTLVISWNPTG
 YRLDPQKAGALVFNALWEEGAVLSALKNARFAHNLT AQRMEDFYSTNVWGFAFGGFR
 TLSAENLVAIDGYKGAYGGASAGVDIQLMEDFVLGVSGAAFLGKMDSQKFDAEVSRKG
 VVGSVYTGFLAGSWFFKQOYSLGETQNDMKTRYGVLGESSASWTSRGVLADALVEYRS
 LVGPVRPTFYALHENPYVEVSYASMKFEGTEQGREARSFEDASLTNITPLGMKFEELAEI
 KGQFSEVNSLGISYAWEAYRKVEGGAVQLLEAGFDWEGAPMDLPRQELRVALENTE
 WSSYFSTVLGLTAFCCGFTSTDSKLG YEANTGLRLIF

SEQ ID NO: 19 (pmpE)(CT869)

MKKAFFFFLIGNSLSGLA REVP SRIFLMPNSVPDPTKESLSNKISLTGDTHNLTNCYLDNL
 RYILAILQKTPNEGAAVTITDYL SFFDTQKEGIYFAKNLTPESGGAIGYASPNSPTVEIRDTI
 GPVIFENNTCCRLFTWRNPYAADKIREGGAIHAQNLYINHNHDVVGFMKNFSYVQGGAI
 STANTFVVSSENQSCFLFMDNICIQNTAGKGGAIYAGTSNSFESNNCDLFFINNACCAGG
 AIFSPICSLTGNRGNI VFYNNRCFKNVETASSEASDGGAIKVTTRLDVTGNRGRIFSDNIT
 KNYGGAIYAPVVTLV DNGPTYFINNIANNKGGAIYIDGTSNSKISADRHAIIFNENIVTNV
 TNANGTSTSANPPRRNAITVASSSGEILLGAGSSQNLIFYDPIEVSNAGVSVSFNKEADQT
 GSVVFSGATVNSADFHQRNLQTKTPAPLTL SNGFLCIEDHAQLTVNRFTQTGGVVSLGN
 GAVLSCYKNGTGDSASNASITLKHIGLNLSSILKSGAEIPLLWVEPTNNSNNTADTAATF
 SLSDVKLSLIDDYGNSPYESTDLTHALSSQPMLSISEASDNQLQSENIDFSGLNVPHYGWQ
 GLWTWGWAKTQDPEPASSATITDPQKANRFHRTLLLTWLPAGYVPSPKHRSPLIANTLW
 GNMILLATESLKNSAELTPSGHPFWGITGGGLGMMVYQDPRENHPGFHMRSSGYAGMI
 AGQTHTFSLKFSQTYTKLNERYAKNNVSSKNYSCQGEMLFSLQEGFLLTKLVGLYSYGD
 HNCCHFYTQGENLTSQGTFRSQTMGGAVFFDLPMKPFGSTHILTAPFLGALGIYSSLSHF
 TEVGAYPRSFSTKTPLINVLVPIGVKGSFMNATHRPQAWTVELAYQPVLYRQEPGIAAQL
 LASKGIWFGSGSPSSRHAMS YKISQQTQPLSWLTLHFQYHGFYSSSTFCNYLNGEIALRF

SEQ ID NO: 20 (pmpF)(CT870)

MIKRTSLSPACL SFFYLSTISILQANETDTLQFRRFTFS DREIQFVLDPASLITAQNIVLSNLQ
 SNGTGACTISGNTQTQIFSNSVNTTADSGGAFDMVTTSTASDNANLLFCNNYCTHNKG
 GGAIRSGGPIRFLNNQDVLFYNNISAGAKYVGTGDHNEKNRGGALYATTITLTGNRTLAF
 INNMSGDCGGAISADTQISITDTVKGILFENNHTLNHIPYTQ AENMARGGAICSRRLCSIS
 NNSGPIVFNYNQGGKGGAI SATRCVIDNNKERIIFSNNSSLGWSQSSASNGGAIQTTQGF
 TLRNNKGSIFYDSNTATHAGGAINCGYIDIRDNGPVYFLNNSAAWGAAFNLSKPRSATN
 YIHTGTGDIVFNNNVVFTLDGNLLGKRKLFINNNNEITPYTSLGAKKDTRIIFYDLFQW
 ERVKENTSNNPPSPTS RNTITVNPETEFSGAVVFSYNQMSSDIRTLMGKEHNYIKEAPTTL
 KFGTLAIEDDAELEIFNIPFTQNPTSLLALGSGATLTVGKHGKLNITNLGVILPILKEGKSP
 PCIRVNPQDMTQNTGTGTQPSSTSSISTPMIIFNGRLSIVDENYESVYDSMDLSRGKAEQLI
 LSIETTNDGQLDSNWQSSLNTSLLSPPHYGYQGLWTPNWITTTYTTITLNNNSSAPTSATSI

AEQKKTSETFTPSNTTTASIPNIKASAGSGSGSASNSGEVTITKHTLVVNWAPVGYIVDPIR
 RGDLIANS�VHSGRNMTMGLRSLLPDNSWFALQGAATTLFTKQKRLSYHGYSASKG
 YTVSSQASGAHGKFLLSFSQSSDKMKEKETNNRLSSRYLSALCFEHPMFDRIALIGAA
 ACNYGTHNMRSFYGTKKSSKGKFHSTTLGASLRCEL RDSMPLRSIMLTPFAQALFSRTEP
 ASIRESGDLARLFTLEQAHTAVVSPIGIKGAYSSDTWPTLSWEMELAYQPTLYWKRPLLN
 TLLIQNNGSWVTTNTPLAKHSFYGRGSHSLKFSHLKLFANYQAEVATSTVSHYINAGGA
 LVF

SEQ ID NO: 21 (pmpG)(CT871)

MQTSFHKFFLSMILAYSCCSLGGGYAAEIMIPQGIYDGETLTVSFPYTVIGDPSGTTVFSA
 GELTLKNLDNSIAALPLSCFGNLLGSFTVLGRGHSLTFENIRTSTNGAALSDSANSGLFTIE
 GFKELSFNSCNLLAVLPAATTNNGSQTPTTTSTPSNGTIYSKTDLNNEKFSFYSNLV
 SGDGGAI DAKSLTVQGISKLCVFQENTA QADGGACQVVT SFSAMANEAPIAFIANVAGV
 RGGGIAAVQDGGQGVSSSTSTEDPVVSFSRNTAVEFDGNVARVGGGIYSYGNVAVLNNG
 KTLFLNNVASPVYIAAEQPTNGQASNTSDNYGDGGAIFCKNGAQAAGSNNSGSVSFDGE
 GVVFSSNVAAGKGGAIYAKKLSVANCGPVQFLGNIAN DGGAIYLGESGELSADYGD
 IIFDGNLKR TAKENAADVNGVT VSSQAISMGGSGGKITTLRAKAGHQILFNDPIEMANGNN
 QPAQSSEPLKINDGEGYTGDIVFANGNSTLYQNVTEQGRIVLREKAKLSVNSLSQTGGSL
 YMEAGSTLDFVTPQPPQPPAANQLITLSNLHLSSLLANNAV TNPPTPNPPAQD SHPAI
 GSTTAGSVTISGPIFFEDLDDTAYDRYDWLGSNQKIDVLKLQLGTQPSANAPSDLTLGNE
 MPKYGYQGSWKLA WDPNTANNGPYTLKATWTKTGYNPGPERVASLVPNSLWGSILDIR
 SAHSAIQASVDGRSYCRGLWVSGVSNFFYHDRDALGQGYRYSISGGYSLGANSYFGSSMF
 GLAFTEVFGRSKDYVVCRSNHACIGSVYLSTKQALCGSYLFGDAFIRASYGFGNQHMK
 TSYTFAEESDVRWDNNCLVGEIGVGLPIVITPSKLYLNELRPFVQAEFSYADHESFTEEGD
 QARAFRSGHLMNLSVPVGVKFDRCSSTHPNKYSFMGAYICDAYRTISGTQTLLSHQET
 WTTDAFHLARHG VIVRGSMYASLTSNIEVYGHGRYEYRDTSRGYGLSAGSKVRF

SEQ ID NO: 22 (pmpH)(CT872)

MPFSLRSTSFCFLACLCSYSGFASSPQVLTPNVTT PFKGDDVYLNGDCAFVNVYAGAE
 NGSII SANGDNLTTITGQNHTLSFTDSQGPVLQNYAFISAGETLTLKDFSSLMFSKNVSCGE
 KGMISGKTVSISGAGEVIFWDNSVGYSPLSIVPASTPTPPAPAPAPAASSLSPTVSDARKG
 SIFSVETSLEISGVKKGV MFDNNA GNFGTVFERGNSNNNAGSGGSGSATTPSFTVKNCKGK
 VSFTDNVASC GGGVVYKGT VLFKDNEGGIFFRGNTAYDDL GILAATS RDQNTETGGGG
 GVICSPDDSVKFEKNKGSIVFDYNFAKGRGGSILTKEFSLVADDSVVSNNTA EKGGA I
 YAPTIDISTNGGSILFERNRAAEGGAICVSEASSGSTGNLTLSASDGDIVFSGNMTSDRPGE
 RSAARILSDGTTVSLNASGLSKLIFYDPVVQNN SAAGASTPSPSSSSMPGAVTINQSGNGS
 VIFTAESLTPSEKLQVLNSTSNFPGALT VSGGELVVT EGATLTTGTITATSGRVTLGSGAS
 LSAVAGAANNNTCTVSKLGIDLESFLT PNYKTAILGADGTVTVNSGSTLDLVMESAE
 VYDNPLFVGSLTIPFVTLSSSSASNGVTKNSVTINDADAAHYGYQGSWSADWTKPPLAP
 DAKGMVPPNTNNTLYLTWRPASNYGEYRLDPQRKGELVPNSLWVAGSALRTFTNGLKE
 HYVSRDVGFVASLHALGDYILNYTQDDRDGFLARYGGFQATAASHYENG SIFGVAFGQ
 LYGQTKSRMYYSKDAGNMTMLSCFGRSYVDIKGTETVMYWETAYGYSVHRMHTQYF
 NDKTQKFDHSKCHWHNNNYAFVGA EHNFL EYCIPTROFARDYELTGFMRFEMAGGW
 SSSTRETGSLTRYFARGSGHNMSLPIGIVAHAVSHVRRSPPSKLTLMGYPDIWRVTPH
 CNMEIANGVKTPIQGSPLARHAFFLEVHDTLYIHFGRAYMNYSLDARRRQTAHFVSM
 GLNRIF

SEQ ID NO: 23 (pmpI)

MRPDHMFCCLC AAILSS TAVLFGQDPLGETALLTKNPNHV VCTFFEDCTMESLFPALC
 AHASQDDPLYVLGNSYCWVFSKLHITDPKEALFKEKGDL SIQNFRFLSFTDCSSKESSPSII
 HQKNGQLSLRNNGSMSFCRNHAEGSGGAISADAFSLQHNYLFTA FEENS SKNGGGA IQA

QTFSLSRNVSPISFARNRADLNGGAICCSNLCISGNVNPLFFTGN SATNGGAICCSIDLNTS
 EKGSLSLACNQETLFASNSAKEKGGAIYAKHMLVLRYNPVSFINNSAKIGGAIAIQSGGS
 LSILAGEGVSFLFQNN SQRTSDQGLVRNAIYLEKDAILSSLEARNGDILFFDPVQESSKES
 PLPSSLQASVTSPTPATASPLVIQTSANRSVIFSSERLSEEEKTPDNLTSQLQQPIELKSGRL
 VLKDRVLSAPSLSQDPQALLIMEAGTSLKTSSDLKLATLSIPLHSLDTEKSVTIHAPNLSI
 QKIFLSNSGDNFYENVELLSKEQNNIPLLTLSKEQSHLHLPDGNLSSHFGYQGDWTFWSW
 KDSDEGHSLIANWTPKNYVPHPERQSTLVANTLWNTYSDMQAVQSMINTIAHGGAYLF
 GTWGS AVSNLFY AHDSSGKPIDNWHHRSLGYLFGISTHSLDDHSFCLAAAGQLLGKSSDSF
 ITSTETTSYIATVQAQLATPLMKISAQACYNESIHELKTKYRSFSKEGFGSWHSVAVSGEV
 CASIPVSNGLFSSFSIFSKLQGFSGTQDGFEESSGEIRSFSASSFRNISLPMGITFEKKSQ
 KTRNYYYFLGAYIQDLKRDVESGPVLLKNAVSWDAPMANLDSRAYMFRLTNQRALH
 RLQTLNVS YVLRGQSHSYSLDLGTTYRF

SEQ ID NO: 24 (MOMP)(CT681)

MKKLLKSVLVFAALSSASSLQALPVGNPAEPSLMIDGILWEGFGGDPDPCATWCD AIS
 MRVGY YGDFVDRVLKTDVNKEFQMGAKPTTDTGNSAAPSTLTARENPA YGRHMQDA
 EMFTNAACMALNIWDRFDVFC TLGATSGYLKGN SASFNLVGLFGDNENQKT VKAESVP
 NMSEDQSVVELYTDITTEAWSVGARAALWECGCATLGASEQY AQSKEPKVEHLNVL CNA
 AEFTINKPKGYVGKEFFLDLTAGTDAATGTKDASIDYHEWQASLALSYRLNMFTPYIGV
 KWSRASFDADTIRIAQPKSATAIFDTTTLNPTIAGAGDVKTGAEGQLGDTMQIVSLQLNK
 MKSRKSCGIAVGTTIVDADKYAVTVETRLIDERA AHVNAQFRF

SEQ ID NO: 25 CSFIGGITYL

SEQ ID NO: 26 SFIGGITYL

SEQ ID NO: 27 SIIGGITYL

SEQ ID NO: 28 (Cap1)(CT529)

MASICGRLGSGTGNALKAFFTPQNNKMARVVNKTGMDKTIK VAKSAAELTANILEQA
 GGAGSSAHITASQVSKGLGDARTVVALGN AFNGALPGTVQSAQSFFSHMKAASQKTQE
 GDEGLTADLCVSHKRRAAAA VCSIIGGITYLATFGAIRPILFVNKMLAKPFLSSQTKANM
 GSSVSYIMAANHAASVVGAGLAISAERADCEARCARIAREESLLEV PGEENACEKKVAG
 EKAKTFTRIKYALLTMLEKFLECVADVFKLVPLPITMGIRAIVAAGCTFTSAIIGLCTFCAR
 A

SEQ ID NO: 29 (groEL-like hsp60 protein)

MVAKNIKYNEEARKKIQKGVKTLAEAVKVT LGPKGRHVVIDKSFGSPQVTKDGVTVAK
 EVELADKHENMGAQMVKEVASKTADKAGDGT TATVLA EAIYTEGLRNV TAGANPMD
 LKRGIDKAVKVVDQIRKISKPVQHHKEIAQVATISANND AEIGNLIAEAMEKVGKNGSI
 TVBEAKGFETVLDIVEGMNFNRGYLSSYFATNPETQECVLEDALVLIYDKKISGIKDFLPV
 LQQVAESGRPLLIAEDIEGEALATLVVNRIRGGFRVCAVKAPGFGDRRKAMLEDIAITG
 GQLISEELGMKLENANLAMLGKAKKVIVSKEDTTIVEGMGEKEALEARCESIKKQIEDSS
 SDYDKEKLQERLAKLSGGVAVIRVGAATEIEMKEKKDRVDDAQHATIAAVEEGILPGGG
 TALIRCIPTLEAFLPMLTNEDEQIGARIVLKALSAPLKQIAANAGKEGAIFQVMSRSANE
 GYDALRDAYTDMLEAGILDPKAVTRSALESAA SVAGLLLTTEALIAEIPBEKPAAAPAMP
 GAGMDY

SEQ ID NO: 30 (omp2/ompB)

MRIGDPMNKLIRRAVTIFA VTSVASLFASGVLETSMAESLSTNVISLADTKAKDNTSHKS
 KKARKNHSKETPVDRKEVAPVHESKATGPKQDSCFGRMYTVKVND DRNVEITQAVPEY

ATVGSPIPIETATGKRDCVDVIITQQLPCEAEFVRSDPATTPADGKLVWKIDRLGQGEK
 SKITVWVKPLKEGCCFTAATVCACPEIRSVTKCGQPAICVKQEGPENACLRCPVVYKINI
 VNQGTATARNVVVENPVPDGYAHSSGQVRVLTFTLGDMQPGEHRTITVEFCPLKRGRAT
 NIATVSYCGGHKNTASVTTVINEPCVQVSIAGADWSYVCKPVEYVISVSNPGDLVLRDV
 VVEDTLSPGVTVLEAAGAQISCNKVVWTVKELNPGESLQYKVLVRAQTPGQFTNNVVV
 KSCSDCGTCTSCAEATTYWKGVAAATHMCVVDTCDPVCVGENTVYRICVTNRGSAEDTN
 VSLMLKFSKELQPVSFSGPTKGTITGNTVVFDLPRLGSKETVEFSVTLKAVSAGDARGE
 AILSSDTLTVPVSDTENTHIY

SEQ ID NO: 31

MFRTYLSRSLFFILALFFCSACDSRSMITHGLSGRDANEIVLLVSKGVAAQKVPQAASST
 GGSGEQLWDISVPAAQITEALAILNQAGLPRMKGTSLLDLFAKQGLVPSEMQEIKIRYQEG
 LSEQMATTIRKMDGIVDASVQISFSPEEEDQRPLTASVYIKHRGVLDNPNMSIMVSKIKRLV
 ASAVPGLCPENVSVVSDRASYSIDITINGPWGLSDEMNYVSVWGHILAKHSLTKFRLVFYF
 LILLFILSCGLLWVIWKTHTLISALGGTKGFFDPAPYSQLSFTQNKPPAKETPGAAEGAE
 AQTASEQPSKENAEKQEENNEDA

SEQ ID NO 32 (CT600)

MRKTIFKAFNLLFSLFLSSCSYPCRDWECHGCD SARPRKSSFGFVPFYSDDEIQQAFVED
 FDSKEEQLYKTSAQSTSFRNITFATDSYSIKGEDNLILASLVRHLHKSPKATLYIEGHTDE
 RGAAAYNLALGARRANAVKQYLIKQGIAADRLFTISYGKEHPVHPGHNELAWQQNRRT
 EFKIHAR

SEQ ID NO 33 (CT541)

MKNILSWMLMFAVALPIVGCDNGGGSQTSATEKSMVEDSALTDNQKLSRTFGHLLSRQ
 LSRTEDFSLLDVEVIKGMQSEIDGQSAPLTDTEYEKQMAEVQKASFEAKCSENLASAEKF
 LKENKEKAGVIELEPNKLQYRVVKEGTGRVLSGKPTALLHYTGSGFDGKVFDSSEKNKEP
 ILLPLTKVIPGFSQGMQGMKEGEVRVLYIHPDLAYGTAGQLPPNSLLIFEVKLIEANDDNV
 SVTE"

SEQ ID NO 34 (CT623)

MKKYFYKGFVGALLACGSTNLFAFAQASSMDSQLWSVEDLDSYLSSKGFVETRKRKRDGV
 LRLAGDVRARWIYAKEDLETTQTPAKPMLPTNRYRSEFNLYVDYTAANSWMTSKMNW
 VTIAGGESSAAGLDINRAFLGYRFYKNPETQAEVFAEIGRSGGLGDFDSDVQFNSNFDGHH
 LYAARRISEKLPTMIVHGGPFVNMMAEKEYAWVVEAILNKLPGNFVVKTSVVDWNTL
 TAKTNDPADASAAQPAKPNTKYDYLVWQVLVVGKSTAMPWFNGQTKNLYTYGAYLFN
 PLAEIPENWKQSTTPTTKITNGKENHAWFIGCSLGGVRRAGDWSATVRYEYVEALAIPEI
 DVAGIGRGNQMKYWFAQAIKQGLDPKESNGFTNYKGVSYQFVMGLTDSVSFRAYAAAY
 SKPANDNLGSDFTYRKYDLGLISSF

SEQ ID NO 35 (CT700)

MWLIVASTLLACLAMALVFKA YRHVISFRSYVNQVIRDVRLSVDLKEWAVAEMRLAPIL
 KKRQYRRKYLFEYIRILRELERFEEAEKLLGEAKKLKLAGAHFFLEV AHKAFRHGAYKE
 AAHAFSLLSAELMGEREVARYTISLVYLGEVDAACRIIEPWIGPLAHQEVFISVGHYFAT
 KRYADAIDFYRRARSLGSCPIDVLNLAHSLRICGQYVDAGMLFRELLGDPVYKDEAMF
 NIGLCEQKLGNSSKALLIYQNSSELWVRGDALMMRYAALAAADQQDYQLAEHCWTLAF
 RCQSYADDWNCCVHYGLALCHLKKYAEAEKVYLRVIQKTPDCLVACKALAWLAGVG
 HATMISAREGIA YAKRALQIKRSPEVLELLSACEAREGNFDVAYDIQAILAERDTTAKER
 ERRSQILKNLRQKLPIQQHIVEVSLLAA

SEQ ID NO 36 (CT266)

MLVESQLGLEDVLEAFSEFNFDIQSKSFIESFQDKKLRRRTVIQRFLHHPILLHIHDIARAAYL
LAALLEGVDLG YQFLCMHQTQSGAALLFRRAGFLWGGLPYPGHAEMAMLLSRIAIFY
DTSYEQVQKMIAFQHALFSHERNIFPALWSQEGSRSNQEKTA VSKLLFCQKEARIEDQFT
LTDMSLGFWMRRTPSFSA YVSGSGCKSGVGAFGLIGDVGVNLNYGPCVGDPECLGFGLC
GQVKEFSCQEKDEEVSSISFAGALSQPSSRRTGFSYLQDALFSTNSCYCIDITEQKCHVASS
LDRENQDAFFAIFCKGSQCQVCNGPKLRTGSPDSYKGPAYDVLKGEKETVRILSSSPHM
EIFSLQKDRFWGSNFLINLPYTQNSINILFEKA

SEQ ID NO 37 (CT077)

MGKFFASYLLILAPFFLQSCSAPSRTTLEGVRMTIPYRIVFGEALSPDAFQQAQKEIDRVF
DHIDQTFNNWNPLSEISRINRTTKQTPILSPALFAFLCEIDHFHAFSDGRFDP TLGALKSL
WLLHLKSH TIPSQBLQHL YKHSSGWH LISL DKTQQT LRKLSPLVQLDL CGTVKGFVADL
LGTACAQFCQNY YVEWGGEIKTKGKHPSGRSWAVASSATPEILHLHDHAIATSGSQYQR
WHVDNKTYTHILDPLTGTPLEDSSHPI LAVSVINESCAFADAMATALTTFSSKQEALDWA
NKKHLCA YITDKNVS

SEQ ID NO 38 (CT456)

MTENSISGYQPTVTTSTSTTSASGASGSLGASSVSTTANATVTQTANATNSAATSSSIQTTG
ETVVNYTNSASAPNVTVSTSSSTQATATS NKTSQAVAGKITSPDTSESSETSTSSSDHIP
SDYDDVGSNSGDISNNYDDVGSNNGDISSNYDDAAADYEPRTTENIYESIGGSRTSGPEN
TSGGAAAALNSLRGSSYSNYDDAAADYEPRTTENIYESIGGSRTSGPENTSGGAAAALN
SLRGSSYSNYDDAAADYEPRTTENIYESIGGSRTSGPENTSDGAAAALNSLRGSSYTTG
PRNEG VFPGPEGLPDMSLPSYDPTNKTSLLTFLSNPHVKSKMLENSGHFVFIDTDRSSI
LVPNGNWDQVCSIKVQNGKTKEDLDIKDLENMCAKFCTGFSKFGSDWDSLVEPMVSAK
AGVASGGLNLPNTVIINNKFKTCVAYGPWNSQEASSGYTPSAWRRGHRVDFGGIFEKAND
FNKINWGTQAGPSSDDGISFSNETPGAGPAAAPSPTPSSIPIINNVNVVGGTNVNIGDTNV
NTNTTPTTQSTDASTDTS DIDDINTNNQTD DINTTDKDS DGAGGVNGDISETESSSGDDS
GSVSSSESDKNASVGN DGPAMKDILSAVRKHL D VVPGENGGSTEGPLPANQTLGDVIS
DVENKGS AQDTKLSGNTGAGDDPTTTAAVGN GABEITLSDTDSGIGDDVSDTASSSGD
ESGGVSSPSES NKNTAVGNDGPSGLDILAAVRKHL DKVYPGDNGGSTEGPLQANQTLG
DIVQDMETTGTSGETV VSPWKGSTSTESAGGSGSVQTL LSPPPPTSTTTLRGTGATTT
SLMMGGPIKADIITGGGGGRIPGGGTLEKLLPRIAHLDISFDAQGD LVSTEEPQLGSIVNK
FRQETGSRGILAFVESAPGKPGSAQVLTGTGGDKGNLFQAAAAVTQALGNVAGKVNLA I
QQQKLSSLVNDDGKGSVGRDLFQAAAQTTQVLSALIDTVG

SEQ ID NO 39 (CT165)

MFQPETVPSNRSTETTPQNIEVYNDRNFTNHTTEDVIRIGERLQRQFYNMTEESRVPF TTS
PSHHTGNWKT AFLYNLSQVVAHIFFSTVQPIRVKPTRIPPSPTPPPEGTTTAETSTSENKVT
TISKEQEVTTKPLLVRERRSLLHSQ

SEQ ID NO 40 (CT713)

MSSKLVNYLRLTFLSFLGIAS TSLDAMPAGNPAPFVIPGINIEQKNACSF DL CNSYDVLSA
LSGNLKL CFCGDYIFSEEAQVKDVPVVTSTTAGVGPSPDITSTTKTRNFDLVNCNLNTN
CVAVAFSLPDRSLSAIPLFDVSFEVKVGGLKQY YRLPMNAYRDF TSEPLNSESEVTDGMI
EVQSNYGFVWDVSLKKVIWKDGVSVFVGADYRHASCPIDYIANSQANPEVFIADSDG
KLNFKESV CVGLTTYVNDYVLPYLA FSIGSVSRQAPDDSFKKLED RFTNLKFKVRKITS
SHRGNICIGATNYVADNFFYNVEGRWGSQRAVNVSGGFQF

SEQ ID NO 41 (CT082)

MSISGSGNVSPATPDFDPSILMGRQAASAHAAKEASGASKATETSAAEQQALISSGTELD
YVTDLQQSEGKYKKTLDKTSKSPKTKLGNFSKVRAGTKGFLTGFGRASRISARKAEN

NGEGMSMIPSQMEYVKKKGNRVSPQMNFYLGASGLWSPTS DVSSITENCLGATALSTT
 PLLTTMQDPVSIHLSSGEIT ALASFNPVVRTASLNEQTINAWTEARLGGMVSTLLDPNI
 ETSSLLRRAPT VSNEGMVDVSDMGNQTTSLSMEGLVNTV VDDPASABBEKKTGELSLEE
 MAAMAKMMAALLSSGQGM AVFIASSTPSSGLTQFPPEPKFSGTIPHHFSKKEDNETIWGL
 DSQIGSIAFDTRRENNASPLPTTSLHEEAS YRFPVGEAPLDVNEIPFAVQHSTVFSKETANT
 EQALIQNESLGEIPVSAEVVGQDTVSSAYQFPSHLGMAVLASVPLSTEDYKTA VEHRKGP
 GGPPDPLYQYRNVAVDPAIIFQSPSPFSVSSRFSVQ GKPEAVA VYND DQEEAAGGNRDS
 DEGKDQEQDKTRETEDAGGDS

SEQ ID NO 42 (CT181)

MLSKFCKLSLSAILLINTLAPSETFSEEGTSGFLGRMKSWILKDKTILSTTEESQTS AIEKVS
 DLLSWKRYDYTQESGF AIQFPESPEHSEQVIEVPQSDLAIRYDTYVAETPSDSTVYVVSIV
 EYPEKIDISRPELNLQEGFAGMLYALPESQVLYLKATALQGHKALEFWIACDDVYFRGM
 LVSVNHTLYQVFMVYKGRSPEILDKEYSTFIQSFKVTKVRNSKKMDIRKRVSL

SEQ ID NO 43 (CT050)

MNDTKNNISSSFWNPNKVVTKVLLKVSETGIESTPGIVKHNQLITQSENPTDPTDAVTFK
~~YLKENYTKENDPNPGFLPTTGGTMTGDIDMGGNNVTDIVMYTNGQQNETDDSAVTIGY~~
 LNEKADEIKSNDQITTA VAGLSNINSQISTLHQLLGIAEDPDTVTNPDELKTSGGT VYEDI
 DMSSNTVSDLGTPTNKDTKSAINVEFVQAKITSPQMAFLKNNDTNLSNITVSEYFNWLQ
 DPTQAPTPEPDPDPEPAPEPEPDTSDSSGSGSEN PADPAPTNPSDSNAQNNTPTSSNGATAS
 IRKLAATTTT VPTDTEIAPAAEDPNLPNTTFSEK SPLWEEFFSFS DSSRSEMVIQKTGILTF
 MQGTWENPSSSQTPSTDPISLELTVTPPTDTPPESPSPPEAPAPEATPSPTNNNL TASITK
 TFSRKYNLSATPSPTPTPTPTPTITKTLSSLSSGQSCTLQIPVQATRSVLKLKYVNPNNSS
 GGSSGSGGSSQPETTPTGITLQSFSWSLVLTPEITKATSTPSTPSQP

SEQ ID NO 44 (CT157)

MSVQGSSSLKYSDLFKPPEPTSSDSSKEPPKESAWKV VSHSRGRRRARSNPSPHTSQNT
 SPKDSSLVARTDKAATDIFNSAKHKAIETTKRSDQQRSLHILHLLAENPEIVFHS AHQT
 NHNDPQRM LCDAILQANRIITMRIFNIGSPEIRALIRA VRRNIPVVVSAWNFPNLSNWDR
 ESEL CVELRGNPQICLHKKTTLIDNQLTI GTANYTKSSFFKDINLTALIQNPALYSLSDT
 RGSVSIGSQTISYYPLPFPQSNTKILPIIQEIQAQRTIKIAMNIFSHTEIFLALEQARLRGVTI
 TIVINKKESAHTLDILHRISALLLLKS VTTVDLSLHAKICLIDNQLIFGSPNWTYHGMHKN
 LEDLLIVTPLTPKQIHSIQEIWAFLKNSSPV

SEQ ID NO 45 (CT128)

MDRSPLFLIIMGAPGSGKGTQSKLLASQLSLLHISSGDLLRDAVSKDTPLSQEIKSYLDQG
 KLLPDTLVWKL VHEKLDEFQQDTLLRRLSFLSRSENSAILDGFPRTVTQAKLLHEFLSSYF
 PNYKVILLDISDEEVLNRLTSRYICPACQGIYNEQQGFSSCPKCSVELIRRSDDTLEVILDRI
 QTYKQETQPVLDYYTEKQKLITIDANAPTQQVQFSILDSLSASLVYQERDCCNDCDDED

SEQ ID NO 46 (CT153)

MTKPSFLYVIQPFVSFNPRLGRFSTDSDTYIEENRLASFIESLPLEIFDIPSFMETAISNSPYI
 LSWETTKDGALFTILEPKLSACAATCLVAPSIQMKSDAELLEIKQALLRSSHDGVKYRIT
 RESFSPEKKT PKVALVDDDIELIRNVDFLGRAVDIVKLDPINILNTVSEENILDYSFTRETA
 QLSADGRFGIPPGTKLFPKPSFDVEISTSIFEETTSFTRSFSA SVTFSPDLAATMPLQSPPM
 VENGQKEICVIQKHLFPSYSPKLVDIVKRYKREAKILINKLAFGMLWRHRAKSQILTEGS
 VRLDLQGFTESTKYN YQIQVGSHTIAAVLIDMDISKI QSKSEQAYAIRKIKSGFQRSLLDYYH
 IYQIERKQTFSPKHSLSSTSHSESDLDLSEAAAFSGSLTCEFVKKSTQHAKNTVTCST
 AAHSLYTLKEDDSSNPSEKRLDSCFRNWIENTKLSANSPDSWSAFIQKFGTHYIASATFGGI
 GFQVLKLSFEQVEDLHKKISLETA AANSLLKGSVSSSTESGYSSYSSTSSSHTVFLGGTV

LPSVHDERLDFKDWSESVHLEPVPIQVSLQPITNLLVPLHFPNIGAAELSNKRESLQQAIR
VYLKEHKVDEQGERTTFTSGIDNPSSWFTLEAAHSP LIVSTPYIASWSTLPYLFPTLRERSS
ATPIVFYFCVDNNEHASQKILNQSYCFLGSLPIRQKIFGSEFASFPYLSFYGNAKEAYFDNT
YYPTRCGWIVEKLNNTTQDQFLRDGDEVRLKHVSSGKYLATTPLKDTHTGLTRTTNCEDA
IFIKKSSGY

SEQ ID NO 47 (CT262)

MKKFLLLSLMSLSSLPTFAANSTGTIGIVNLRRCLEESALGKKESAEBFEKMKNQFSNSMG
KMEEELSSYSKLQDDDYMEGLSETAAAEELRKKFEDLSAEYN TAQGGYYQILNQSNLKR
MQKIMEEVKKASETVRIQEGLSVLLNEDIVLSIDSSADKTD AVIKVLDDSFQNN

SEQ ID NO 48 (CT276)

MFKRPAKNFFDEVQTL YEDSGANSTSYSIYPQTERLENHNSNIFEPAKPAETRLLSQEEHS
QWTDQQEELATQESSFPEEPETTLGEGVSFKGELTFERLLRIDGT FEGILVSKGKIIVGPQG
YVKANIELEEAVIAGVVEGNITVTGRVSLQGRAMVTGDIQAGSLCVD EGVRLCGYVSIQ
GAPSNEQEEIDS

SEQ ID NO 49 (CT296)

MRAVLHLEHKRYFQNHGHILFEGLAPVSDCKQLEAELKLFLKEVAVVKDRHLQRWREN
VHRTLPEVQMTVKRVRLDHLAAELTHRSRVALVRDLWVQKQEEIFFDDCD CSVLLCLSG
EKAGWGLFFSGEYPQDVFNWGAGDTAILRFSSAGFPN

SEQ ID NO 50 (CT372)

MQAAHHHYHRYTDLKLRQNHKKDLISPKPTEQEACNTSSLSKELIPLSEQRGLLSPICDFI
SERPCLHGVSVRNKQALKNSAGTQIALDWSILPQWFNPRVSHAPKLSIRDFGYSAHQTV
TEATPPCWQNCFNPSAAVTIYDSSYGKGVFQISYTLVR YWRENAATAGDAMMLAGSIN
DYPSRQNIQSFTFSQNFNERNVSLTIGQYSLY AIDGTLYNNDQQLGFISYALSQNPTATYS
SGSLGAYLQVAPTASTSLQIGFQDAYNISGSSIKWSNLTKNRYNFHGFASWAPRCCLGSG
QYSVLLYVTRQVPEQMEQTMGWSVNASQHISSKLYVFG RYSGVTGHVFPINRTYSFGM
ASANLFNRNPQDLFGIACAFNNVHLSASPNTKRKYETVIEGFATIGCGPYLSFAPDFQLYL
YPALRPNKQSARVYSVRANLAI

SEQ ID NO 51 (CT412)

MNRVIEIH AHYDQRQLSQSPNTNFLVHHPYLTLIPKFLLGALIVYAPYSFAEMELAISGHK
QGKDRDTFTMISSCEGTNYIINRKLILSDFSLLNKVSSGGAFRNLAGKISFLGKNSSASIH
FKHININGFGAGVFSESSIEFTDLRKLVAFGSESTGGIFTAKEDISFKNNHHIAFRNNITKGN
GGVQLQGDMKGSVSFVDQRGAIIFTNNQAVTSSSMKHSGRGGAISGDFAGSRILFLNNQ
QITFEGNSAVHGGAIYNKNGLVEFLGNAGPLAFKENTTIANGGAIYTSNFKANQQTSPILF
SQNHANKKGGAIYAQYVNLEQNQDTIRFEKNTAKEGGG AITSSQCSITAHNTIIFSDNAA
GDLGGGAILLEGKKPSLT LIAHSGNIAFSGNTMLHITKKASLDRHNSILIKEAPYKIQLAA
NKNHSIHFFDPVMALSASSSPIQINAPEYETPFFSPKGMIVFSGANLLDDAREDVANRTSIF
NQPVHLYNGTLSIENG AHLIVQSFKQTGGRISLSPGSSLALYTMNSFFHGNISSKEPLEING
LSFGVDISPSNLQAEIRAGNAPLRLSGSPSIHDPEGLFYENRDTAASPYQMEILLTSDKIVDI
SKFTTDSLVTNKQSGFQGAWHFSWQPNTINNTKQKILRASWLPTGEYVLESNRVGRAVP
NSLWSTFLLQTASHNLGDHLCNNRSLIPTSYFGVLIGGTGAEMSTHSSEESFISRLGAT
GTSIIRLTPSLTLSGGGSHMFGDSFVADLPEHITSEGIVQNVGLTHVWGPLTVNSTLCAAL
DHNAMVRICSKKDHTY GKWDTFGMRGTLGASYTFLEYDQTMRVFSFANIEATNILQRA
FTETGYNPRSFSTKLLNIAPIGIGYEFCLGNSSFALLGKGSIGYSRDIKREN PSTLAHLAM
NDFAWTTNGCSVPTS AHTLANQLILRYKACSLYITAYTINREGKNLSNSLSCGGYVGF

SEQ ID NO 52 (CT480)

MIDKIIRTLVLSLFLLYWSSDLLEKDVKSIRELKALHEDVLELVRISHQQKNWVQSTDF
SVSPEISVLKDCGDPAPFNLLCEDPYVEKVVPSSLKEGFVPKGILRTAQVGRPDNLSPFNG
FVNIVRFYELCVPNLAVEHVKGKYEAFPSLALKIEBHVEDGSGDKEFHILRPNMFWEF
IDPTLFPKNITLADSFLRHPVTAHDVKFYDVVMNPYVAEMRAVAMRSYFEDMVSVR
VENDLKLIVRWRAHTVRNEQGEEBKVLVSFANTLALQPLPCFVYQHFANGEKIVPED
SDPDTYRKDSVWAQNFSSHWAYNYIVSCGAFRFAGMDDEKITLVRNPYHNPFALVE
KRYTYMKDSTDLSLQDFKAGKVDIAFYPPNHVDNLASFMTSAYKEQAARGEAILKNS
SDRSYSYIGWNCLSLFFNNRSVRQAMNMLIDRDRIEQCLDGRGVSVSGPFSLCSPSYNR
DVEGWQYSPBEAARKLEEGWIDADGDGIREKVIDGVVVPFRFRLCYVKSVTARTIAE
YVATVCKEVGECCLGLDMADYSQALEEKNFDAILSGWCLGTPPEDPRALWHSEGALE
KGSANAVGFCNEEADRIEQLSYEYDSNKRQALYHRFHEVIHESPYAFLYSRQYSLVYK
EFVKNIFVPTHEQDLIPGAQDET VNLSMLWVDKEEGRCSAIS

SEQ ID NO 53 (CT548)

MLKMFWLNSLVFFSLLLSACGYTVLSPHYVEKKFSLSEGIYVCPIEGDSLGLDVSSLSYEL
EKRGLHTRSQGTSSGYVLKVSFNETDENIGFAYTPQKPDEKPVKHFTVSNEGRALSAK
VQLIKNRTQELVEKCLRKSVTFDFQPDLTANAHQLALGQFEMHNEAIKSASRILYSQL
AETIVQQVYYDLF

SEQ ID NO 54 (CT043)

MSRQNAEENLKNFAKELKLPDVAFDQNNTCILFVDGEFSLHLYEEHSDRLYVYAPLLD
GLPDNPQRRALALYEKLLEGSMGLGGQMAGGGVGVAATKEQLILMHCVLDMKYAETNLLK
AFAQLFIETVVKWRTVCSDISAGREPTVDTMPQMPQGGGGGIQPPAGIRA

SEQ ID NO 55 (CT635)

MKNNSAQKIIDSQILSIYKIDFEPFSGATLTDDNDLDYQMLIEKTQEKIQELDKRSQEL
QQTGMTREQMEVFANNPDNFSPEEWRALENIRSSCNEYKKETEELIKEVTNDIGHSSHKS
PTPKTKSSSQKSKKNWIPL

SEQ ID NO 56 (CT859)

MRKIILCSRGFCAGVIRAIQTVEVALEKWGRPIYVKHEIVHNRHVVDKLREKGAIFIEDL
QEVPRNSRVIFSAGVPPSVREEAEERGLIADATCGLVTKVHSAVKMYAKKGYHILIGK
RKHVEIIGIRGEAPDQITVVENIAEVEALPFSAQDPLFYVTQTTLSDDAADIVAALKARY
PRIFTLPSSSICYATQNRQGALRNILPQVDFVYVIGDTQSSNSNRLREVAERRGVATARLVN
HPDEVTEILQYSGNIGITAGASTPEDVVQAACLMKLQELIPDLSEMDLDFVEEDTVFQLPK
EL

SEQ ID NO 57 (CT671)

MELNKTSESLFSKIDHNHPRTEAHEPRDQREVRVFSLEGRSSTRQEKADRMPPGRTSSRQ
ESSKGSEEGAVHESTAGVSSKEEESKGDGFFTGGNPTSGMALVETPMAVVSEAMVETS
TMTVSQVDLQWVEQLVTSTVESLLVADIDGKQLVEIVLDNSNTVPAAFCGANLTLVQTG
EISVSFSNFVDQAQLTEATQLVQQNPKQLVSLVESLKAQQLNLTEL VVGNAVAVSLPTIE
KIETPLHMIAATIRHHDQEGDQEGEGRQDQHQQHQQEKKVEEAI

SEQ ID NO 58 (CT016)

MKVINDQFICISPYISARWNQIAFIESCDGGTEGGITLKLHLIDGETVSIPNLGQAIVDEVF
QEHLLEYESTAPQKNKEEEKISSLLGAVQQMAKGCEVQVFSQKGLVSMLLGGAGSINV
LQHSPEHKDHPDLPTDLLERIAQMMSLSIGPTSILAKPEPHCNCLHCQIGRATVEEEDAG
VSEDLTFRSWDISQSGEKMYTVTDPLNPEEQFNVYLGTPIGCTCGQPYCEHVKAFLYT

SEQ ID NO 59 (CT017)

MLIFALSFGADACLCAADLSKAKVEASVGDRAAFSPFTGEIKGNRVRLRLAPHTDSFIIKE
LSKGDCLAVLGESKDYVVAAPGVRGYVFRFTVLDNVIEGEKVNVRLEPSTSAPILARL
SKGTVVKTLGAAQGWIEIALPKQCVFYVAKNFVKNVGALDLYNQKEGQKKLALDLS
SAMDFADELQKKIEDIDLDAIYKKMNLAQSEEFKDVPGQLSLVQKALERVQEAFLAKS
LEKSSVKVPEIRHKVLEBIAVVSFAVEETPVVTKTEEQKVTTVPVPAPAVVTEPAQDLSSV
KGSLLSHYIRKKGFVKASPVIEGRESFERSLFAVWLSLQPEEIRHQLTMESFYRDEQKKKR
VLTGELEVYPHIVKNNPGDYLLKNGEDVVAFFVYATSIDLSKWLGKSVVLECVSRPNNHF
AFFAYIVLSVKEGA

SEQ ID NO 60 (CT043)

MSRQNAEENLKNFAKELKLPDVAFDQNNTCILFVDGEFSLHLYEEHSDRLYVYAPLLD
GLPDNPQRRALAYEKLLEGSM LGGMAGGGVGVATKEQLILMHCVLDMKYAETNLLK
AFAQLFIETVVKWRTVCSDISAGREPTVDTMPQMPQGGGGGIQPPPAGIRA

SEQ ID NO 61 (CT548)

MLKMFWLNSLVFFSLLLSACGYTVLSPHYVEKKFSLSEGIYVCPIEGDSLGLDVSSLSYEL
EKRGLHTRSQGTSSGYVLKVSLFNETDENIGFAYTPQKPDEKPVKHFIVSNEGRLALSAK
VOLIKNRTQEILVEKCLRKSVTFDFQPD LGTANAHQLALGOEEMHNEAIKSASRILYSQL
AETIVQQVYYDLF